INTRODUCTION

- Feature pyramid works better in locating all scales of objects from: SSD, HyperNet, ION, MR-CNN.
- Using region proposal network to reduce searching space from: R-FCN, Faster R-CNN, Fast R-CNN.
- A fully CNN pipeline with no repeated computation can achieve high detection performance.

Ron: Reverse Connection with Objectness Prior Networks

What is reverse connection and why?

Ron: Reverse Connection with Objectness Prior Networks

METHOD

- Objectness prior: Share anchors between RPN and detector, make it possible to detect objects with fully ConvNet.
- No repeated computations, much faster.
- The total network is fully convolutional.
- There are one map for each type of anchors different from these mask-based methods.

CONCLUSION

- We presented RON, an efficient and effective object detection framework.
- We design the reverse connection to enable the network to detect objects on multi-levels of CNNs. And the objectness prior is also proposed to guide the search of objects.
- We optimize the whole networks by a multi-task loss function, thus the networks can directly predict final detection results. On standard benchmarks, RON achieves state-of-the-art object detection performance.

Check out the code/models

https://github.com/taokong/RON/